

The **National Curriculum** for Computing aims to ensure that all pupils:

- \*can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- \*can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- \*can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- \*are responsible, competent, confident and creative users of information and communication technology

**Key Stage 1** - Pupils should be taught to:

- \*understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions
- \*create and debug simple programs
- \*use logical reasoning to predict the behaviour of simple programs
- \*use technology purposefully to create, organize, store, manipulate and retrieve digital content
- \*recognise common uses of information technology beyond school
- \*use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies

**Key Stage 2** - Pupils should be taught to:

- \*design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- \*use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- \*use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- \*understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration
- \*use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- \*select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- \*use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Year Group	Autumn Knowledge/ Skills	Spring Knowledge/ Skills	Summer Knowledge/ Skills
<b>Reception ELG</b>	<b>Knowledge and Understanding of the World - Technology</b> <ul style="list-style-type: none"> <li>Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.</li> </ul>		
<b>Year 1</b>	<b>Modern Tales (DL)</b> <ul style="list-style-type: none"> <li>I can recognise the ways we use technology in our classroom and my home.</li> <li>I understand that once something is posted you lose control of it.</li> <li>I understand something online may upset me and know where to find help.</li> <li>I know the rules of using technology at home or in school.</li> <li>I can explain what personal information is and that it must be kept private.</li> <li>I can add text to a document to present my ideas.</li> </ul>	<b>Toys (IT)</b> <ul style="list-style-type: none"> <li>I can take a good quality photograph on an iPad/digital camera.</li> <li>I can use technology to create a simple animation.</li> <li>I can store and retrieve my digital work.</li> </ul>	<b>My Online Life C</b> <ul style="list-style-type: none"> <li>I can communicate politely via the internet.</li> <li>I understand something online may upset and know where to find help it anything does.</li> </ul>
	<b>Lost and Found (IT)</b> <ul style="list-style-type: none"> <li>I can use basic functions on an iPad (on, off, volume)</li> <li>I can use some iPad gestures, including swipe down to open a search</li> <li>I can use technology to create and present my ideas. - create a digital drawing.</li> <li>I can combine text and images in a single page document.</li> <li>I can use a search engine.</li> <li>I can use the internet safely to find things out.</li> <li>I can store and retrieve my digital work.</li> </ul>	<b>Robots (CS)</b> <ul style="list-style-type: none"> <li>I can follow a simple algorithm and create a simple sequence algorithm using symbols that solve a problem.</li> <li>I can create algorithms that can be turned into a program using a robot or digital device.</li> <li>I can independently debug simple sequence errors in a program.</li> <li>I can use logical reasoning to predict the outcome of simple programs.</li> </ul>	
	<b>My Online Life A</b> <ul style="list-style-type: none"> <li>I can describe how to behave online in ways that do not upset others and can give examples.</li> <li>I can use a search engine with support.</li> <li>I am aware that content online is owned by the person that created it.</li> </ul>	<b>My Online Life B</b> <ul style="list-style-type: none"> <li>I understand something online may upset and know where to find help it anything does.</li> <li>I can give some simple examples of personal information (e.g. name, address, birthday, age, location).</li> </ul>	<b>Plants (IT)</b> <ul style="list-style-type: none"> <li>I can take a good quality photograph and video on an iPad/digital camera.</li> <li>I can combine text, graphics and sound in a document.</li> <li>I can use technology to create and present my ideas.</li> <li>I can collect and sort data.</li> <li>I can organize, store and retrieve my digital work.</li> </ul>
	<b>Year 2</b>	<b>Online Buddies (DL)</b>	<b>Simple Game (CS)</b>

	<ul style="list-style-type: none"> <li>I can give examples of how technology is used to communicate beyond school.</li> <li>I can use online services to communicate safely.</li> <li>I understand that somethings online may upset me and that I cannot trust everyone online.</li> <li>I can give examples of online bullying behaviour. I understand the impact it may have, and I know where to go for support.</li> <li>I know the rules of communicating using technology at home or in school.</li> </ul>	<ul style="list-style-type: none"> <li>I can create a simple repeat loop.</li> <li>I can create a simple game program.</li> <li>I can identify 'bugs' in computer programs and use the term debug in context.</li> </ul>	<ul style="list-style-type: none"> <li>I can use the internet to communicate with people I don't know well (e.g. email a penpal in another school/ country).</li> <li>I can describe how other people's online identity can be different to their identity in real life.</li> </ul>
	<p style="text-align: center;"><b>Code a Story (CS)</b></p> <ul style="list-style-type: none"> <li>I can plan out an algorithm with a sequence of commands to carry out specific tasks.</li> <li>I can identify 'bugs' in computer programs and use the term debug in context.</li> <li>I can predict the outcome of a sequence of blocks in Scratch. E.g. I can look at my friend's program and tell you what will happen.</li> </ul>	<p style="text-align: center;"><b>Traction Man (IT)</b></p> <ul style="list-style-type: none"> <li>I can give examples of how technology is used to communicate beyond school.</li> <li>I am aware that content online is owned by the person that created it.</li> <li>I can use technology to organise and present my ideas.</li> <li>I can use design and formatting to enhance my digital work (e.g. change font type, size and colour)</li> <li>I can create and edit my own images using drawing apps.</li> <li>I can create an e-book, combining text and images on multi pages.</li> <li>I can save, share and retrieve my digital work.</li> </ul>	<p style="text-align: center;"><b>The Owl and the Pussy Cat (IT)</b></p> <ul style="list-style-type: none"> <li>I can use a search engine and I am aware that not everything I read online is true.</li> <li>I can use design and formatting to enhance my work.</li> <li>I can create digital content using more than one app or piece of software to enhance it.</li> <li>I can use technology to organise and present my ideas in different ways.</li> </ul>
	<p style="text-align: center;"><b>My Online Life A</b></p> <ul style="list-style-type: none"> <li>I can explain simple guidance for using technology in different environments and settings.</li> <li>I can use keywords in search engines and voice activated searching.</li> <li>I can describe why other people's work belongs to them.</li> </ul>	<p style="text-align: center;"><b>My Online Life B</b></p> <ul style="list-style-type: none"> <li>I can explain how information put online about me can last for a long time.</li> <li>I can give examples of bullying behaviour and how it could look online.</li> <li>I can describe and explain some rules for keeping my information private.</li> </ul>	
<p><b>Year 3</b></p>	<p style="text-align: center;"><b>Dancing Robot (CS/IT)</b></p> <ul style="list-style-type: none"> <li>I can improve the quality and presentation of my work using editing and formatting techniques.</li> <li>I can create a simple flow diagram.</li> <li>I can identify bugs in code and predict outcomes.</li> <li>I understand that I must keep testing my program and I can recognise when I need to debug it.</li> <li>I can create my own sprite in Scratch.</li> <li>I can use sequence, selection, repetition and variables to improve my programs.</li> <li>I can evaluate my work and improve its effectiveness.</li> </ul>	<p style="text-align: center;"><b>Online Detectives (DL/IT)</b></p> <ul style="list-style-type: none"> <li>I can analyse information and make judgements about the usefulness of information.</li> <li>I can use search tools to find and use an appropriate website.</li> <li>I can search for and use information from a range of sources.</li> <li>I can make exact searches on the world wide web</li> <li>I can evaluate my work and improve its effectiveness.</li> </ul>	<p style="text-align: center;"><b>The Firework Maker's Daughter T-Shirt Design (IT)</b></p> <ul style="list-style-type: none"> <li>I can improve the quality and presentation of my work using editing and formatting techniques.</li> <li>I can search for and use information from a range of sources.</li> <li>I can search for copyright free images online to use in my own work.</li> <li>I know the consequences of ignoring copyright.</li> <li>I can collect, analyse, evaluate and present data.</li> </ul>
	<p style="text-align: center;"><b>My Online Life A</b></p> <ul style="list-style-type: none"> <li>I can explain why spending too much time using technology can sometimes have a negative impact on me; I can give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos).</li> <li>I can search more efficiently e.g. image search, Boolean search</li> <li>I can explain why copying someone else's work from the internet without permission can cause problems.</li> </ul>	<p style="text-align: center;"><b>The Stone Age (IT)</b></p> <ul style="list-style-type: none"> <li>I can improve the quality and presentation of my work using editing and formatting techniques.</li> <li>I can explain what copyright is and why we have copyright.</li> <li>I can create a screen cast combining a number of elements including video and sound.</li> <li><i>I can discuss different types of digital content and file types.</i></li> </ul> <p style="text-align: center;"><b>My Online Life B</b></p> <ul style="list-style-type: none"> <li>I can give reasons why I should only share information with people I choose to and I can trust.</li> <li>I know how to get help if someone was being bullied online or offline</li> <li>I can describe simple strategies for creating and keeping passwords private.</li> </ul>	<p style="text-align: center;"><b>My Online Life C</b></p> <ul style="list-style-type: none"> <li>I can describe ways people who have similar likes and interests can get together online.</li> <li>I can explain ways in which I might change my identity depending on what I am doing online (e.g. gaming, using an avatar, social media).</li> </ul>

<p><b>Year 4</b></p>	<p><b>Hour of Code (CS)</b></p> <ul style="list-style-type: none"> <li>I can improve the quality and presentation of my work using editing and formatting techniques.</li> <li>I can use conditional statements such as "If", "Then" &amp; "When" to control devices / achieve specific outcomes.</li> <li>I can solve an open-ended problem by breaking it up into smaller parts.</li> <li>I can design and write a program for a given purpose including specific programming features.</li> <li>I can test existing programs to see how they could be improved.</li> </ul> <p><b>My Online Life</b></p> <ul style="list-style-type: none"> <li>I can suggest strategies which might help me limit my online time.</li> <li>I can describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites).</li> <li>I can give some examples of how I can use other people's work on the internet. (copyright free etc)</li> </ul>	<p><b>Minecraft Challenges (DL/CS)</b></p> <ul style="list-style-type: none"> <li>I can collaborate online to create digital content.</li> <li>I can create a simple structure using a 3D app.</li> <li>I can solve a problem by breaking it into smaller parts.</li> <li>I am respectful to others online.</li> </ul> <p><b>The Egyptian Cinderella (IT)</b></p> <ul style="list-style-type: none"> <li>I can improve the quality and presentation of my work using editing and formatting techniques with text, graphics and sound.</li> <li>I can create a short animation.</li> <li>I can explain common file types.</li> <li>I understand the need for copyright and the consequences of ignoring it.</li> </ul> <p><b>My Online Life B</b></p> <ul style="list-style-type: none"> <li>I can describe strategies for safe and fun experiences in a range of online social environments.</li> <li>I can explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others felt about them (their reputation).</li> <li>I use strong passwords and can describe strategies for keeping personal information safe depending on context.is.</li> </ul>	<p><b>River Mersey (IT)</b></p> <ul style="list-style-type: none"> <li>I can plan my film using a storyboard.</li> <li>I can use various video techniques to create a film and edit it.</li> <li>I can create a short film by using a green screen or other technology of my choice.</li> <li>I can explain common file types.</li> <li>I understand the need for copyright and the consequences of ignoring it.</li> </ul> <p><b>Fake or Real (DL)</b></p> <ul style="list-style-type: none"> <li>I can explain what Fake News is.</li> <li>I can explain how social media is used to help Fake News Spread.</li> <li>I can evaluate information presented to me to make informed choices about what is Fake News.</li> <li>I can understand the different methods of communication using the internet.</li> </ul> <p><b>My Online Life C</b></p> <ul style="list-style-type: none"> <li><i>I can collaborate online to create digital content.</i></li> <li>I can explain that others online can pretend to be me or other people, including my friends and can suggest reasons why they might do this.</li> </ul>
<p><b>Year 5</b></p>	<p><b>Coding (CS)</b></p> <ul style="list-style-type: none"> <li>I can use variables, conditional statements, procedure and repeat commands to improve programs.</li> <li>I can use logical reasoning to detect and debug a program.</li> </ul> <p><b>My Online Life</b></p> <ul style="list-style-type: none"> <li>I can describe ways technology can affect sleep and can give advice on how to promote healthy sleep.</li> <li>I can evaluate digital content and can explain how I make choices from search results.</li> <li>I can assess and justify when it is acceptable to use the work of others.</li> </ul>	<p><b>You Tuber (DL/IT)</b></p> <ul style="list-style-type: none"> <li>I can film and produce a short video with elements including text, images, narration and music.</li> <li>I can improve the quality and presentation of my work using editing and formatting techniques.</li> <li>I can collaborate to develop and improve work.</li> <li>I can explain what is meant by the term vlogger.</li> <li>I understand the impact technology can have on my health, well-being and lifestyle by critically analysing the positives and negatives of being a vlogger.</li> <li>I can create a subject specific vlog and understand the potential risks of sharing content online.</li> <li>I am aware that there are people online who may try to upset me and my group of friends. I make a positive contribution to my online community.</li> </ul> <p><b>STEAM Challenges (CS/IT)</b></p> <ul style="list-style-type: none"> <li>I can search for information online and can create a summary report.</li> <li>I can decompose a problem, design an algorithm and use this to write a program.</li> <li>I can use logical reasoning to detect and debug a program.</li> <li>I can collaborate with others to develop and improve work.</li> <li>I can use the skills I have already developed to create content using</li> </ul>	<p><b>Making AR Games (IT)</b></p> <ul style="list-style-type: none"> <li>I can explain what Augmented Reality is.</li> <li>I can use the skills I have already developed to create AR content using unfamiliar technology.</li> <li>I can improve the quality and presentation of my work using appropriate editing and formatting techniques.</li> <li>I can make a QR code that links to my own work.</li> </ul> <p><b>News Reporter and Podcaster (IT/DL)</b></p> <ul style="list-style-type: none"> <li>I can collaborate with others to develop and improve work.</li> <li>I can improve the quality and presentation of my work using editing and formatting techniques.</li> <li>I can record and produce a short audio podcasts and understand basic elements of audio editing.</li> <li>I make a positive online contribution.</li> </ul> <p><b>My Online Life C</b></p> <ul style="list-style-type: none"> <li>I can describe some of the communities in which I am involved and describe how I collaborate with others positively.</li> <li>I can demonstrate responsible choices about my online identity, depending on context.</li> </ul>

		<p>unfamiliar technology.</p> <p><b>My Online Life B</b></p> <ul style="list-style-type: none"> <li>I can describe ways that information about people online can be used by others to make judgements about an individual.</li> <li>I can explain how to block abusive users and report online bullying on the platforms I use.</li> <li>I am aware that free apps or services may read and share my information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others, and explain ways to lessen the impact of this.</li> <li></li> </ul>	
Year 6	<b>Chicken Run (CS)</b>	<b>VR Worlds (CS/IT)</b>	<b>My Online Life C</b>
	<ul style="list-style-type: none"> <li>I can design, plan and create a complex program using Hopscotch.</li> <li>I can use logical reasoning to detect and correct errors in algorithms and programs.</li> <li>I can test, debug and modify a program to improve it</li> </ul>	<ul style="list-style-type: none"> <li><i>I understand how computer networks work, including the internet.</i></li> <li>I can identify the potential of unfamiliar technology to increase my creativity.</li> <li>I can create a complex game using code.</li> <li>I can use the skills I have already developed to create content using unfamiliar online technology.</li> <li>I can save a document/file in various formats.</li> </ul>	<ul style="list-style-type: none"> <li>I can explain how impulsive and rash communications online may cause problems (e.g. flaming, content produced in live streaming).</li> <li>I can challenge and explain why it is important to reject inappropriate messages [about gender] online.</li> </ul>
	<b>My Online Life A</b>	<b>Online Safety Dilemas (DL)</b>	<b>Quiz Show Host (IT)</b>
	<ul style="list-style-type: none"> <li>I can assess and action different strategies to limit the impact of technology on my health and wellbeing (e.g. night shift mode, regular break, following PEGI/BBFC ratings)</li> <li>I can explain how search engines work and how results are selected and ranked.</li> <li>I can reference and acknowledge online sources I have used whilst following copyright law.</li> </ul>	<ul style="list-style-type: none"> <li>I can identify the potential of unfamiliar technology to increase my creativity.</li> <li><i>I can talk about audience, atmosphere and structure when planning a particular outcome.</i></li> <li>I support my friends to protect themselves and make good choices online, including reporting concerns to an adult.</li> <li>I am aware of the need for positive online relationships and I am mindful of others' feelings at all times.</li> <li><i>I can film and produce a short video without any instruction.</i></li> </ul>	<ul style="list-style-type: none"> <li>I can identify the potential of unfamiliar technology to increase my creativity.</li> <li>I can create a digital storyboard to plan a project.</li> <li>I can search effectively and use media following the rules of copyright.</li> <li>I can explain the importance of copyright and the consequences of ignoring it.</li> <li>I can collaborate to create digital content.</li> <li>I can combine a range of media to create content which is suitable for audience and purpose.</li> </ul>
		<b>My Online Life B</b>	
		<ul style="list-style-type: none"> <li>I can explain ways that help build a positive online reputation.</li> <li>I can explain a number of ways that I can capture evidence of bullying content to share with people/agencies who can help me. (screen shot, URL, profile)</li> <li>I can describe effective strategies for managing multiple passwords and know what to do if I forget my password or it is stolen.</li> <li></li> </ul>	

